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(54) INFORMATION DISPLAY CONTROLLING METHODINFORMATION
TRANSMITTING METHODINFORMATION DISPLAY DEVICE AND RECORD
MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To execute filtering control on an information providing side by extracting stream information and control information from an inputted digital signaldeciding stream information to display based on extracted information and displaying it to dynamically change an algorithm for arbitrarilyling set a filtering object range.

SOLUTION: A received individual dynamic image stream is sent to a deciding part 12 via a program extracting part 4. A deciding part 12 transfers the individual dynamic image stream to an individual dynamic image storing part 14 of a

switching part 16 by an instruction from a program executing part 8. Individual dynamic image stream without instructions are abolished. At the time of detecting the finish of a common dynamic image stream the part 16 gives an individual dynamic image stream received from a deciding part 12 by an instruction from a display control part 18 and gives in individual dynamic image stream read from the part 14 to the part 18.

CLAIMS

[Claim(s)]

[Claim 1] An information display comprising:

An input means as which a digital signal which two or more stream information and control information multiplexed at least is inputted.

An extraction means to extract said stream information and said control information from said digital signal inputted by said input means.

The 1st determination means that determines said stream information which should be displayed based on said control information extracted by said extraction means.

A displaying means which displays said stream information determined by said determination means.

[Claim 2] The information display comprising according to claim 1:

Common stream information as which said stream information is displayed on order inputted into said input means at least in said displaying means.

Individual stream information displayed only when chosen.

[Claim 3] When said stream information determined by memory measure which memorizes said individual stream information and said 1st determination means is individual stream information The information display according to claim 2 providing further the 2nd determination means that determines whether to display on order into which this individual stream information was inputted or memorize to said memory measure and a control means which controls contents displayed by said displaying means based on determination of the said 1st and 2nd determination means.

[Claim 4] An information display given in Claims 2 and 3 wherein it opts for a display based on information that said individual stream is peculiar to a user.

[Claim 5] The information display according to claim 4 providing further a memory measure which memorizes information peculiar to said user.

[Claim 6] From a digital signal which two or more stream information and control information multiplexed at least. An information-display control method determining said stream information which should extract said stream information and said control information and should display them based on said extracted control information and controlling presenting of said this determined stream

information.

[Claim 7]An information-display control method according to claim 6wherein said control information controls presenting of said stream information by including an execution program at least and executing this execution program.

[Claim 8]Claim 6wherein said stream information consists of common stream information displayed on order into which said digital signal was inputtedand individual stream information displayed only when chosenand an information-display control method according to claim 7.

[Claim 9]An information-display control method according to claim 8wherein it opts for a display based on information that said individual stream is peculiar to a user.

[Claim 10]An information-display control method according to claim 8 which made it the feature to determine whether to display on order into which this individual stream information was inputted when said stream information determined that a table should be shown is said individual stream informationor memorizeand to control contents to display based on this determination.

[Claim 11]Supplementary information about the contents of stream information according to each with said control information selectable at leastAn information-display control method according to claim 8 controlling presenting of said stream information including an execution program which shows a procedure for choosing said individual stream information which should be displayed by executing said execution program with reference to said supplementary information and information peculiar to a user.

[Claim 12]An information-display control method according to claim 11 updating information peculiar to said user based on said supplementary information.

[Claim 13]The feature and Claim 9 which were carried out and being able to rewrite information peculiar to said useran information-display control method according to claim 11.

[Claim 14]At least one or more common stream information displayed on inputted orderAn information transmission method multiplexing at least one or more common stream information which is chosen and is displayed only on a caseand control information for choosing said individual stream informationand transmitting as a digital signal.

[Claim 15]A recording medium multiplexing and recording at least one or more common stream information displayed on inputted orderat least one or more individual stream information displayed only when chosenand control information for choosing said individual stream information.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention transmits two or more video streams and the

program which controls them in digital broadcasting and relates to the information-display control method, the information transmission method, information display and recording medium which realize the customization mechanism according to the addressee's characteristic.

[0002]

[Description of the Prior Art] By network development, consumers' favorite information can be provided now using a network. For example, in the thing using information filtering technology, a user's liking is beforehand registered into the profile by the keyword etc., and there are some which extract the information according to each user's liking from the newspaper contents in an information service company and transmit in a network. However, the communication by a network is 1 to 1 in order to provide many consumers with the information according to the liking; many network communications are needed and there is a fault to which communication cost becomes large.

[0003] On the other hand, the present television broadcasting etc. occur as a means of the access to information seen from the user in addition to a network. The cost to transmit is relatively small in order unlike communication by a network for television broadcasting to be one-to-one Oshi's information transmission and to transmit information to many consumers simultaneously.

[0004] However, the offer of information according to liking of the user of each in television broadcasting on the other hand was impossible. Only when a television viewer changed the channel of television, the way only had choosing one's favorite program.

[0005]

[Problem to be solved by the invention] By the way, digitization of television broadcasting will be expected in the near future. Thereby, if improvement in a transmission bandwidth is realized, it will become possible to transmit the information more than the dynamic image data actually displayed on a screen from a broadcasting station. By using the information on this redundant portion, it is possible to customize a program content also in the same channel. In the technique used by information filtering as the conventional customization technique, how to take out the thing beyond a certain threshold value with reference to a profile for every element of each which constitutes a program can be considered.

[0006] However, the method only had that when the program element which is fixed as for the algorithm of filtering and was chosen in this conventional method is displayed, followed a user's directions. That is, it was not able to be specified for every program how changing the algorithm for information filtering dynamically would display a filtering result, either. Filtering of required contents was not able to be made controllable by the broadcasting station side, either, reflecting a television viewer's liking, for example like CM.

[0007] Change of the algorithm which was made in consideration of this invention and the above-mentioned situation makes a user's liking reflect and filters stream information is enabled dynamically. Or it aims at providing the information-display control method, the information transmission method, information display and

recording medium which can control filtering also by the offer-of-information side enabling setting out of the object range of filtering arbitrarily or reflecting a user's liking.

[0008]

[Means for solving problem] This invention is characterized by an information display comprising the following in order to solve SUBJECT stated above.

The input means as which the digital signal which two or more stream information and control information multiplexed at least is inputted.

An extraction means to extract said stream information and said control information from said digital signal inputted by said input means.

The 1st determination means that determines said stream information which should be displayed based on said control information extracted by said extraction means.

The displaying means which displays said stream information determined by said determination means.

[0009] Furthermore the information display of this invention comprises the following:
Common stream information as which said stream information is displayed on the order inputted into said input means at least in said displaying means.
Individual stream information displayed only when chosen.

[0010] A memory measure an information display of this invention furthermore remembers said individual stream information to be The 2nd determination means that determines whether to display on order into which this individual stream information was inputted when said stream information determined by said 1st determination means is individual stream information or memorize to said memory measure Based on determination of the said 1st and 2nd determination means a control means which controls contents displayed by said displaying means was provided further.

[0011] Furthermore an information display of this invention opts for a display based on information that said individual stream is peculiar to a user. Furthermore an information display of this invention possesses further a memory measure which memorizes information peculiar to said user.

[0012] An information-display control method of this invention from a digital signal which two or more stream information and control information multiplexed at least. Said stream information which should extract said stream information and said control information and should display them based on said extracted control information is determined and presenting of said this determined stream information is controlled.

[0013] Furthermore an information-display control method of this invention controls presenting of said stream information by said control information's containing an execution program at least and executing this execution program.

[0014] Furthermore the information-display control method of this invention comprises the following:

Common stream information as which said stream information is displayed on the order into which said digital signal was inputted.

Individual stream information displayed only when chosen.

[0015] Furthermore the information-display control method of this invention opts for a display based on the information that said individual stream is peculiar to a user. When said stream information furthermore determined that the information-display control method of this invention should be shown in a table is said individual stream information it determines whether to display on the order into which this individual stream information was inputted or memorize and makes to control the contents to display into the feature based on this determination.

[0016] The supplementary information about the contents of the stream information according to each at least in which the information-display control method of this invention of said control information is still more nearly selectable Presenting of said stream information is controlled including the execution program which shows the procedure for choosing said individual stream information which should be displayed by executing said execution program with reference to said supplementary information and information peculiar to a user.

[0017] Furthermore the information-display control method of this invention updates information peculiar to said user based on said supplementary information. The information that the information-display control method of this invention is still more peculiar to said user is characterized [the feature and / which were carried out] by the ability to rewrite.

[0018] At least one or more common stream information as which the information transmission method of this invention is displayed on the inputted order At least one or more common stream information which is chosen and is displayed only on a case and the control information for choosing said individual stream information are multiplexed and it transmits as a digital signal.

[0019] At least one or more common stream information displayed on the order into which the recording medium of this invention was inputted Only when chosen at least one or more individual stream information displayed and the control information for choosing said individual stream information were multiplexed and recorded.

[0020] According to this invention since the control information provided from the offer-of-information side side is used for the selection of stream information performed to the user side a filtering result can be affected by changing this control information.

[0021] For example by transmitting a control program as control information in television broadcasting etc. along with the program body which is stream information (video) Contents of broadcast can be customized according to a televiewer's liking and it becomes customizable according to a program by transmitting a control program according to a program further. Thereby the degree of charm of the broadcast in the both sides of the transmitting side and a receiver can be raised.

[0022]

[Mode for carrying out the invention] Hereafter an embodiment of the invention is described referring to Drawings. This embodiment assumes a common video stream and two or more individual video streams as a component of contents of broadcast roughly as what doubles a control program using supplementary information of each individual video stream for customizing an individual video stream for every televiewer and it transmits in a receiver have profile information reflecting a televiewer individual's liking and with directions of a control program for customization which received. It judges which individual video stream is displayed using supplementary information and profile information of an individual video stream and enables it to choose and display a televiewer's favorite stream automatically out of an individual video stream by this. According to this embodiment since a control program can be transmitted for every program a selection method of a televiewer's favorite stream can be specified for every program.

[0023] That by which a usually different frame follows a video stream. After a frame of a certain contents else [such as (for example a movie)] carries out predetermined number continuation also let a thing (for example something that some Still Picture Sub-Division changes for every predetermined time) in which a frame of another contents carries out predetermined number continuation or a thing which combined these suitably be a certain thing.

[0024] In this embodiment when a video stream is accompanied by an audio stream an audio stream shall be added to a video stream and it shall be adjusted and processed. The following explanation explains a video stream.

[0025] First an information display concerning a 1st embodiment of this invention is explained. An example of composition of an information display concerning this embodiment is shown in drawing 1. This information display is provided with the receive section 2 the program extraction part 4 the program storing part 6 the program execution part 8 the profile information storage section 10 the judgment part 12 the individual video storage parts store 14 the changeover section 16 the display control part 18 and the display 20. An outline of operation of this information display controller is shown in drawing 2.

[0026] The receive section 2 receives TV radio waves by which a digital signal was modulated restores to this and changes into a digital signal. When an error correction etc. are processed to a digital signal in the transmitting side processing corresponding to processing of this error correction is performed to a digital signal acquired in the receive section 2. The receive section 2 solves this when a digital signal is enciphered (it decodes).

[0027] Here it is assumed into TV radio waves that a video stream and supplementary information have multiplexed by time sharing as an unmodulated signal. Supplementary information shall be a control program. Required various data shall also be contained in a control program.

[0028] Video streams shall include a common video stream and an individual video stream. A common video stream serves as a displaying object unconditionally and

the individual video stream was chosen by customizing processing with the displaying object. The individual video stream as which only what should display promptly and was chosen will be displayed if a common video stream is received will be displayed once displaying promptly or accumulating with the relation between receiving timing and display timing.

[0029] To a common video stream an individual video stream and supplementary information. Peculiar identification information is added to a common video stream an individual video stream and supplementary information respectively and distinction of the exception of a common video stream an individual video stream and supplementary information is enabled by these peculiar identification information or other additional information. The portions of the beginning of the data of a bundle ball and the last are made identifiable respectively. The above information shall be used in each following identification maneuver.

[0030] An example of the broadcast data multiplexed to drawing 3 (a) is shown. The broadcast data of the channel 1 and the channel 2 shall have multiplexed broadcast data here. The control section which the channel 2 becomes from supplementary information and the individual video stream shall be contained.

[0031] Since the program extraction part 4 was received from the receive section 2 it extracts supplementary information from a digital signal and it stores this in the program storing part 6. A video stream is given to the judgment part 12.

[0032] The program storing part 6 stores the supplementary information extracted by the program extraction part 4. The program execution part 8 performs customizing processing based on the profile information memorized by the supplementary information and the profile information storage section 10 which were stored in the program storing part 6. Here the control program which is supplementary information is executed and customizing processing is performed.

[0033] An individual video stream is chosen in customizing processing. Various methods can be considered for the procedure of this selection and various methods are known as the selection technique by profile information. For example the method of considering parameters such as importance to which the method based on a keyword and the receiver were set. Various methods such as the method of considering parameters such as a method (what refers to it uniformly the method of extracting a user's liking and making it reflect in next selection) of referring to the past selection history a method which combined these suitably and importance which the transmitting side set as this further can be considered.

[0034] In customizing processing it is judged whether it is made to display after making the individual video storage parts store 14 memorize the selected individual video stream or it is made to display as it is. For example when it is judged as what is displayed after making the individual video storage parts store 14 memorize when the individual video stream 12 or 3 is chosen in the case of drawing 3 (a) and the individual video stream 4 or 5 is chosen it is judged as what is displayed as it is. This processing may not be because the received control program is executed but may be realized by executing the program equipped from the first.

[0035] In the program execution part 8 the directions according to this decision

result are given to the judgment part 12 and the changeover section 16. For example when the individual video stream 1 is chosen by drawing 3 (a) to the judgment part 12. Issue directions of the purport that the individual video storage parts store 14 is made to memorize a video stream with the identification information of the individual video stream 1 and to the switching part 16. Directions of the purport that the video stream read from the individual video storage parts store 14 is given to the display control part 18 are taken out to the next which detected the end of the common video stream. The contents of the indicative data at this time are shown in drawing 3 (b). The time t_0 in the time-axis T of drawing 3 (a) and the time-axis T of drawing 3 (b) t_1 and t_2 shall show the time hererespectively.

[0036] When the individual video stream 4 is chosen by drawing 3 (a) for example to the judgment part 12. Directions of the purport that a video stream with the identification information of the individual video stream 4 is transmitted to the switching part 16 are issued and directions of the purport that the video stream transmitted from the judgment part 12 is given to the display control part 18 are taken out to the next which detected the end of the common video stream at the switching part 16.

[0037] These processings shall be completed before receiving the first individual video stream. The profile information storage section 10 memorizes the profile information for making a user's liking reflect. Herea certain information shall be set to profile information. The case where information is not set as the profile information after an initial state or elimination etc. is explained later.

[0038] The judgment part 12 judges whether the video stream given from the program extraction part 4 is a common video stream or it is an individual video stream. In being a common video stream it gives the switching part 16. When it is an individual video stream according to the directions from the program execution part 8 it gives to the individual video storage parts store 14 or gives the switching part 16 and discards about an individual video stream without directions (it means that it transmits and had been naturally discarded by overwrite of the next data to; relevance storage area which is not).

[0039] The individual video storage parts store 14 memorizes temporarily an individual video stream given from the judgment part 12. The changeover section 16 reads an individual video stream memorized by the individual video storage parts store 14 to required timing according to directions from the program execution part 8 and gives it to the display control part 18 while it gives a common video stream given from the judgment part 12 to the display control part 18. The display control part 18 changes and outputs a video stream given from the changeover section 16 to a form which can be displayed on the display 20. For example this is decoded when a video stream is coded by MPEG. A video stream will be changed into an analog signal if the display 20 considers an analog signal as an input.

[0040] The display 20 displays by inputting an output dynamic image signal from the display control part 18. Hereby making TV program body into an example of a

common video stream and multiplexing this advertisement information for advertisement information as an example of an individual video stream explains an example which enables offer of an advertising stream according to a televiewer's liking using an example of structure of broadcast data of drawing 3 (a).

[0041] The case where broadcast a program body as a common video stream and five kinds of CM streams are broadcast as an individual video stream is assumed. The program for determining which is chosen and displayed supplementary information and out of five kinds of CMs as supplementary information is included in the control section multiplexed and broadcast. In drawing 3 (a) the period of the individual video streams 4 and 5 after a common video stream is a period used for the display of the selected individual video stream.

[0042] The example of the supplementary information of five kinds of CM streams is shown in drawing 4 as supplementary information included in the control section of drawing 3 (a). Here product classification and performer names (a product name, the field concerned, a related field, etc.) (character names such as a personal name of a performer, talent, etc., a group name or anime, etc.) are described as a keyword of an advertising content to each CM stream. Arbitrary box numbers shall be described to each CM stream.

[0043] On the other hand, the profile information for reflecting a televiewer's liking is stored in the profile information storage section 10. An example of a televiewer's information is shown in drawing 5. Drawing 5 (a) is an example of a key word table and product classification and a performer name are described.

[0044] In the program execution part 8, by executing a control program, the supplementary information of CM like drawing 4 is compared with the profile information of a televiewer like drawing 5 (a) for example and it judges which advertisement is the most appropriate to choose and display. Since the "car" of the supplementary information of CM and an audience profile's "car" are in agreement in the case of the example of drawing 4 and drawing 5 (a), the advertisement 1 is chosen.

[0045] In the program execution part 8, it determines whether once store selected CM stream in the individual video memory storage 14. In this case, since the selected advertisement 1 (it is considered as the individual video stream 1 of drawing 3) is broadcast before a period for a display of an individual video stream once storing in the individual video memory storage 14 till a period for a display of an individual video stream is determined.

[0046] As a result, a form of an actually displayed indicative data is shown in drawing 3. A table which recorded a selected box number and its selected number of times, for example like drawing 5 (b) may be established in an audience profile. By using this table, for example, a display can concentrate on the same advertisement and it can prevent seeing this repeatedly.

[0047] Like [as a result of receiving for example from the middle of a common video stream when selection of an individual video stream is not completed or when there is no individual video stream to which the result of having performed keyword matching corresponds] When an individual video stream is not

chosenoneDuring [for a display] the individual video stream after a common video streamThe method of displaying the individual video stream (it is the individual video stream 4 at thing; drawing 3 (a) beforehand defined when there were more than one) broadcast after a common video stream as it isor the method of determining at random can be considered.

[0048]Nextthe outline of the flow of overall processing of this embodiment is explainedreferring to drawing 12. Firstthe receive section 2 receives broadcast data (Step S1). Subsequent operations differ according to the kind of received data (Step S2).

[0049]The received data can be classified into fourthe once accumulated video streamthe video stream displayed as it isthe video stream to discardand a control program. Firstby the program extraction part 4it is extracted by the control program and by nextthe judgment part 12. It is processed as a video stream which a common video stream and the directed individual video stream display as it isIt will be processed as a video stream which other directed individual video streams once accumulateand the remaining individual video stream without directions will be discarded (Step S11Step S12).

[0050]The data classified into the once accumulated video stream is transmitted to (Step S3) and the individual video storage parts store 14and is memorized (step S4). Thenan individual video stream is read from the individual video storage parts store 14 to required timingand it is transmitted to the display 20 and displayed on it (Step S5).

[0051]The data classified into the video stream then displayed is transmitted and displayed on the display 20without passing (Step S6) and the individual video storage parts store 14 (Step S7).

[0052]A control program (Step S7) is used for customizing processing (Step S8). An example of the procedure of this customizing processing is shown in drawing 6. Herethe thing (reference frequency removes the thing beyond the number of times k of regulation) with profile information and supplementary information with the highest degree of coincidence is chosen among the streams according to each (this example advertising stream). The degree of coincidence is calculable by a publicly known predetermined method. Herei and the box number to display are explained for a box number as j. It is judged whether the default k of reference frequency was first exceeded for the degree of coincidence of the profile of the box number 1 (Step S21S22). Nextall the box numbers are found out (Step S23S25). After finding out all the box numbersreference frequency displays the j-th advertisement used as the maximum (Step 26S27).

[0053]Nextit explains flowing into overall processing of this embodiment in more detail using drawing 12. If the receive section 2 receives broadcast data (Step S1)a common video stream will be given to the switching part 16 via the judgment part 12 from the program extraction part 4 (Step S2S6). The switching part 16 is in the state of outputting the information from the judgment part 12in first stagetherefore a common video stream is displayed on the display 20 through the display control part 18 (Step S7). Henceforth a common video stream continues

being displayed till the end. If the end of a common video stream is detected it will shift from the switching part 16 to the display control of an individual video stream.

[0054] On the other hand the control program of the control section which multiplexed with the common video stream and was received (Step S1) is extracted by the program extraction part 4 (Step S2S8) and is stored in the program storing part 6. And a control program is read by the program execution part 8 and is executed (step S9). Customizing processing is performed by this and an individual video stream is chosen. The control content over an individual video stream is determined and directions required for the judgment part 12 and the switching part 16 are given. These processings are completed before receiving the first individual video stream.

[0055] Now reception of an individual video stream will give a received individual video stream to the judgment part 12 via the program extraction part 4 (Step S1S2).

[0056] First according to directions from the program execution part 8 the judgment part 12 transmits this individual video stream to the individual video storage parts store 14 or (Step S3S4) transmits it to the switching part 16 (in the case of Step S6). This is discarded about an individual video stream without directions.

[0057] If the switching part 16 detects an end of a common video stream next according to directions from the program execution part 8 an individual video stream which gave an individual video stream received from the judgment part 16 to the display control part 18 or was read from the individual video storage parts store 14 is given to the display control part 18.

[0058] Thus once a selected individual video stream is accumulated in the individual video storage parts store 14 it is displayed on the display 20 through the display control part 18 (Step S5) or it is displayed on the display 20 through the display control part 18 without passing the individual video storage parts store 14 (Step S7).

[0059] Although the contents of the individual video stream were advertisements in drawing 3 even if it is some program bodies it is applicable similarly. Next an information display concerning a 2nd embodiment of this invention is explained.

[0060] The composition of the information display concerning this embodiment is the same as that of drawing 1 fundamentally. The procedure of fundamental operation of each component part is the same as that of a 1st embodiment. The outline of overall operation is the same as that of a 1st embodiment.

[0061] The point that this embodiment is different from a 1st embodiment is a point that multiple selection of the individual video stream is made. Below this embodiment explains focusing on the point which is different from a 1st embodiment.

[0062] Here the intersection of a news program is made into an example of a common video stream and it explains using an example of the composition of the news program of drawing 7 (a) by making into an example customization of the news program which made the individual parts of the selectable news program an example of the individual video stream. The broadcast data of the channel 1 and

the channel 2 shall have multiplexed broadcast data here. The control section which becomes a common video stream and an individual video stream and the channel 2 from supplementary information and the individual video stream shall be contained in the channel 1.

[0063] A case where broadcast important news as a common video stream and seven kinds of individual news are broadcast as an individual video stream is assumed. Individual news should target specific viewers such as a sports hobby and a local news for example. A program for determining which is chosen and displayed supplementary information and out of seven kinds of individual news is included in a control section multiplexed and broadcast. In drawing 7 (a) a period for three individual video streams after a common video stream is a period used for a display of three selected individual news.

[0064] The time t_0 in the time-axis T of drawing 7 (a) and the time-axis T of drawing 7 (b) t_1 , t_2 , t_3 and t_4 shall show the time here respectively. An example of supplementary information of seven kinds of individual news is shown in drawing 8 (a). Here importance set to a keyword at the transmitting side is described to news according to each.

[0065] In this embodiment the item of the importance of news is increasing to individual video stream information as compared with a 1st embodiment. Thus according to a program a new item is added freely and since the control program which utilized the item in selection of an individual video stream can be transmitted there is an advantage which can set up a selection program according to a program.

[0066] An example of the profile information for choosing a viewer's favorite news memorized by the profile information storage section 10 is shown in drawing 8 (b). Here the keyword is described.

[0067] At this embodiment since it is different from a 1st embodiment and the combination of the individual video stream information which cannot be chosen exists first by customizing processing it chooses in consideration of such a point.

[0068] For example in drawing 7 (a) the individual video streams 6 and 7 cannot be chosen simultaneously. The restrictions according to the capacity of the individual video storage parts store 14 of this information display exist. For example when the individual video storage parts store 14 can memorize only one individual video stream. When the individual video stream 1 is chosen in drawing 7 (a) Although the individual video streams 2 and 3 cannot be chosen simultaneously when the individual video storage parts store 14 can memorize two individual video streams Even when the individual video stream 1 is chosen in drawing 7 (a) the individual video streams 2 and 3 can be chosen simultaneously (for example it displays in order of the individual video stream 2→1→3).

[0069] The case where two or more display orders are determined as a meaning and two or more display orders can be considered with the combination of the selected individual video stream. For example when the individual video streams 2 and 6 are chosen in drawing 7 (a) what is displayed in order of the individual video streams 2 and 6 will be determined as a meaning and the individual video

storage parts store 14 will be used. On the other hand when the individual video streams 13 and 6 are chosen in drawing 7 the case where it displays in order of the individual video streams 13 and 6 and the case where it displays in order of the individual video streams 31 and 6 can be considered. In the case of the former the individual video storage parts store 14 is used about the individual video streams 1 and 3 and when it is the latter the individual video storage parts store 14 is used only about the individual video stream 1. And when the individual video storage parts store 14 can memorize only one individual video stream in the case of the latter a meaning is determined but when the individual video storage parts store 14 can memorize two individual video streams the former or the latter is determined by arbitrary methods.

[0070] When above it is necessary in customizing processing to obtain the capacity of the individual video storage parts store 14 from the information display concerned as a parameter but the method the individual video storage parts store 14 considers that is [memory of only one individual video stream] possible is also considered.

[0071] For example in the case of drawing 8 the news 15 and 7 (it shall correspond to the individual video streams 15 and 7 of drawing 7 (a) respectively) is chosen from a keyword. And displaying on the broadcast period of the individual video streams 2 and 3 once storing the news 1 (individual video stream 1) in the individual video storage parts store 14 in this case and displaying the news 5 (individual video stream 5) and the news 7 (individual video stream 7) as it is is determined.

[0072] Therefore the individual video stream 1 is given to the individual video storage parts store 14 to the judgment part 12. The individual video streams 5 and 7 issue directions of the purport that it gives the switching part 16 and receive the switching part 16. In the next which detected the end of the common video stream. The video stream read from the individual video storage parts store 14 is given to the display control part 18. The video stream given to the next which this video stream ended from the judgment part 12 is given to the display control part 18 and directions of the purport that the video stream given from the judgment part 12 is given to the display control part 18 are taken out to the next which this video stream ended.

[0073] Although the contents of the individual video stream were some program bodies in drawing 7 (a) even if it is an advertisement it is applicable similarly. When two or more individual video streams are selectable the grouping of the period for an individual video stream display and the individual video stream is carried out and it may be made to make them correspond like this embodiment (when two or more display periods for individual video streams exist). For example the individual video stream belonging to the group A is displayed in the period A for an individual video stream display for the group A and displays the individual video stream belonging to the group B in the period B for an individual video stream display for the group B. Such composition can be used for the various purposes for example it is also possible to use as the individual parts of a program the group A other than the usage which carries out the grouping of the individual parts of a program and the

usage which carries out the grouping of the advertisement and to use the group B as an object for an advertisement.

[0074] By the way a case where an advertisement is transmitted by a different independent channel as a modification of a 1st and 2nd embodiment can be considered. Structure of broadcast data in this case is shown in drawing 9. It is specified by identification information etc. whether a control section is chosen from CM of which range is currently broadcast by a CM channel as an advertisement of the program concerned. A CM channel can be shared between two or more usual channels. This is also enabled to control CM independently of a program and width of CM selection becomes large for a televiewer. The receive section 2 shall receive a multiple channel simultaneously in this case.

[0075] Next an example which added the user action treating part 30 to composition of an information display is explained as a modification of a 1st and 2nd embodiment. The user action treating part 30 performs processing for making an input from a user reflect in selection operation in profile processing and has one or two or more functions which were combined arbitrarily of the following functions.

[0076] (1) When profile information is not set up make a user input profile information for example a keyword off-line. For example display a selection picture on the display 20 through the display control part 18 a user is made to choose items such as a desired keyword spontaneously corresponding to a user's demand and this is stored in the profile storage parts store 10.

[0077] (2) When customizing processing starts by the program execution part 8 and profile information is not set up While displaying a selection picture on the display 20 through the display control part 18 making a user choose items such as a desired keyword and giving this directly to the program execution part 8 it stores in the profile storage parts store 10. In this case in the display control part 18 processing which makes a video stream and a selection picture present on display compound is performed.

[0078] (3) When customizing processing starts by the program execution part 8 and profile information is not set up The identification information of the individual video stream which displayed the supplementary information about the individual video stream concerned broadcast in the control section of drawing 3 or drawing 7 etc. on the display 20 made the user choose a desired individual video stream as it directly and was chosen as it is directly given to the program execution part 8 through the display control part 18. In this case it may be made to store information including the keyword about the selected individual video stream etc. in the profile storage parts store 10. In this case in the display control part 18 processing which makes a video stream and a selection picture present on display compound is performed. (4) By a televiewer's input while providing a manual mode other than the automatic mode which chooses an individual video stream automatically and choosing an individual video stream by a manual mode in early stages items such as a keyword relevant to a selected result etc. are accumulated in profile information and after profile information is accumulated enough and customized it may be made to set it in automatic mode.

[0079](5) In addition various methods can be considered. Next the information display concerning a 3rd embodiment of this invention is explained. The example of composition of the information display concerning this embodiment is shown in drawing 11. This information display is provided with the receive section 2 the program extraction part 4 the program storing part 6 the program execution part 8 the judgment part 12 the individual video storage parts store 14 the changeover section 16 the display control part 18 and the display 20. The outline of operation of this information display is shown in drawing 12.

[0080] The composition of the information display concerning this embodiment is the same as that of drawing 1 fundamentally. The procedure of fundamental operation of each component part is the same as that of a 1st embodiment. The outline of overall operation is the same as that of a 1st embodiment.

[0081] The point of difference of this embodiment is a point that the image data with which selection of an individual video stream is presented is obtained and this image data is compounded by the display control part 18 with a video stream present on display by executing a control program. And when a user performs predetermined action (input) to the displayed image data it is the point that the individual video stream corresponding to the control program which generated the image data is chosen. Therefore in this embodiment selection operation by the customizing processing which used profile information is not performed. That it is different in drawing 12 is the point that Step S10 which determines the control program used for customizing processing among two or more control programs is added. Below this embodiment explains focusing on the point which is different from a 1st embodiment.

[0082] If the icon generated by execution of the control program is here displayed in piles on the image of a video stream on display and a user clicks on an icon with a mouse The advertisement corresponding to the control program which generated the icon explains the example which chooses and is made to be displayed using an example of the structure of the broadcast data of drawing 13 (a).

[0083] This control program has a program body in a head part and can consider a format which has image data in that following part for example. In drawing 13 (a) three control programs are transmitted along with a common video stream. Each control program displays an icon on a screen as mentioned above and if a televiewer clicks it will consider it as the program as which a video stream corresponding according to it is chosen. The contents of the indicative data at this time are shown in drawing 13 (b). The time t_0 in the time-axis T of drawing 13 (a) and the time-axis T of drawing 13 (b) t_1 and t_2 shall show the time here respectively.

[0084] It can take out via a network using the means of communication which may be transmitted and received simultaneously with a control program or is not illustrated and the contents of this selected video stream can also be taken out from the inside of the storage by the side of a televiewer.

[0085] In drawing 13 (b) the televiewer's action should enter to the icon display relevant to the control program 2 and the video stream corresponding to it is displayed. In the determination of this control program as described above by

clicking on the icon corresponding to each control programAlso when the control program used is changed [others / in the case of being determined] by the timing to clickit thinks (for examplethe control program 2 is chosen in the timing of 300 in a figure).

[0086]In drawing 13 (a)when anything does not have action from a user and selection is not madeit can carry out as [display / as a default / the individual video stream which follows a common video stream / for example/ as it is].

[0087]By the wayin each above embodimentinformation is recorded on a recording medium and reproducing behind is also possible. As a form of recordwhat records an output of the receive section 2a method of recording an input to the display control part 18a method of recording an output from the display control part 18etc. can be considered.

[0088]In each above embodimentalthough broadcast by an electric wave was assumedit is applicable also to a system which can apply also to cable broadcasting and receives information via a recording medium.

[0089]In each above embodimentit may be good also as one piece of equipmentthe whole having contained the display 20 may be constituted as the display 20the other portionand an isolated systemandin each casethe receive section 2 may also be constituted as an isolated system.

[0090]Each above function can all realize the part also as software. It can also carry out as a medium which recorded a program for making a computer perform each above-mentioned procedure or a means and in which machine reading is possible. This invention is not limited to an embodiment mentioned abovein the technical scopecan change variously and can be carried out.

[0091]

[Effect of the Invention]According to this inventionby giving control information from the offer-of-information side along with stream information to the user sideThe contents of contents can be customized according to a user's likingand it becomes customizable according to a program etc. by transmitting control information according to the unit of a request of a program etc. further. Therebythe degree of charm to offers of informationsuch as broadcast in the both sides of the transmitting side and a receivercan be raised.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]The figure showing the composition of the information display concerning a 1st and 2nd embodiment of this invention

[Drawing 2]The flow chart which shows the outline procedure of a sympathy news display device

[Drawing 3]The figure showing an example of stream composition

[Drawing 4]The figure showing an example of the supplementary information of an individual video stream

[Drawing 5]The figure showing an example of profile information

[Drawing 6]The flow chart which shows an example of customization operation

[Drawing 7]The figure showing other examples of stream composition

[Drawing 8]The figure showing other examples of the supplementary information of an individual video streamand profile information

[Drawing 9]The figure showing the example of further others of stream composition

[Drawing 10]The figure showing other composition of the information display concerning the embodiment

[Drawing 11]The figure showing the composition of the information display concerning a 3rd embodiment of this invention

[Drawing 12]The flow chart which shows the outline procedure of a sympathy news display device

[Drawing 13]The figure showing the example of further others of stream composition

[Explanations of letters or numerals]

2 -- Receive section

4 -- Program extraction part

6 -- Program storing part

8 -- Program execution part

10 -- Profile information storage section

12 -- Judgment part

14 -- Individual video storage parts store

16 -- Changeover section

18 -- Display control part

20 -- Display

30 -- User action treating part
